



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

648.4709

Job Sheet 172735



Part No: 648.4709

Job Qty: 1 ea

Part Name: SWA10A Overhaul



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 2/21/18

Job Tracking No:

Due Date: 4/27/18

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: DWG OM_OOPM-SWA10A Rev 3 (648.4709) IPP Rev A 18.01.25 New issue DP Verify DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		4/27/18	0.00	0.00	Start Up Small Fab-4		MU
110	Small Fab	1 pcs		4/27/18	0.00	0.00	Small Fab-4		MU DAS
120	QC	1 pcs		4/27/18	0.00	0.00	QC5		38
121	DC	1 pcs		4/27/18	0.00	0.00	DC		9-88
130	Packaging	1 pcs		4/27/18	0.00	0.00	Packaging3-1	# 16 102	APR 24 2018
140	QC21-FG	1 Ea		4/27/18	0.00	0.00	QC21		DAS APR 24 2018

Part Op 110 - Pick bag and tag.

Descriptions: 121 - Supply owner's & overhaul procedures manual

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
188-FPSS-1032-1/2	Set Screw	1 Ea (1 ea)	90-Start up Operation	5037670
188-FPSS-1032-3/8	Set Screw	1 Ea (1 ea)	90-Start up Operation	5037669
188-FPSS-1032-5/8	Set Screw	1 Ea (1 ea)	90-Start up Operation	5037083
188-FSCS-1032-5/8	Wire Clamp Screw	4 Ea (4 ea)	90-Start up Operation	5031242
600.1319	Up Decal	1 Ea (1 ea)	90-Start up Operation	5036704
EL314-SJTOW	3 Wire	6 ft (6 ea)	90-Start up Operation	5029542
SWA10A-1100	Upper DU Bearing	1 Ea (1 ea)	90-Start up Operation	5036190
SWA10A-1200	Lower DU Bearing	1 Ea (1 ea)	90-Start up Operation	5036727
SWA10A-1300	Roller Thrust Bearing	1 Ea (1 ea)	90-Start up Operation	5036191
SWA10A-1400	Circlip	1 Ea (1 ea)	90-Start up Operation	5049928
SWA10A-400	Thrust Washer	1 Ea (1 ea)	90-Start up Operation	5027243
SWA6A-1900	Female Spade Terminal - 1/4"	12 Ea (12 ea)	90-Start up Operation	5029410
SWA6A-2000	1/8" Female Spade Connector	4 Ea (4 ea)	90-Start up Operation	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	188-FPSS-1032-1/2	1	100	0
	188-FPSS-1032-3/8	1	100	0
	188-FPSS-1032-5/8	1	199	0
	188-FSCS-1032-5/8	4	184	0
	600.1319	1	250	0
	EL314-SJTOW	6	247	0
	SWA10A-1100	1	6	0

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐ Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/C ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/ ☐ Inspection Incom ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incom ☐ Drill Holes ☐			Completed By _____ 1 / Supervisor Verification _____ Coordinator _____ Vrong _____ ensions _____ tolerance _____ ing _____		
OTHER : _____					



SWA10A-1200	1	10	0
SWA10A-1300	1	10	0
SWA10A-1400	1	10	0
SWA10A-400	1	0	0
SWA6A-1900	12	88	0
SWA6A-2000	4	100	0

Part Specifications

Specifications could not be found.

Plex 2/21/18 2:23 PM Dart.lajeunesse.marie

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

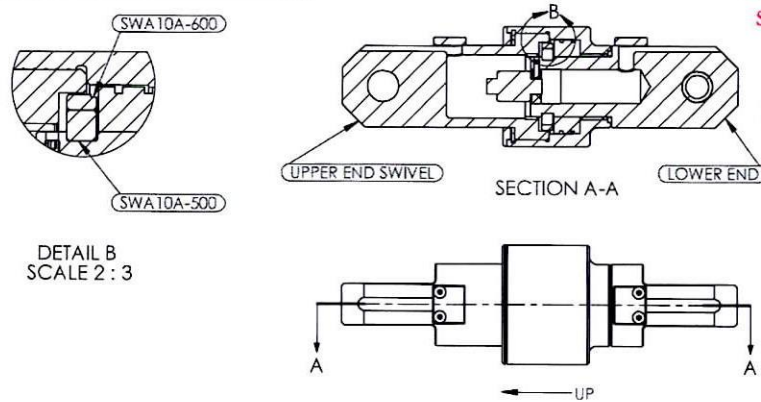
Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
☐ OTHER : _____					

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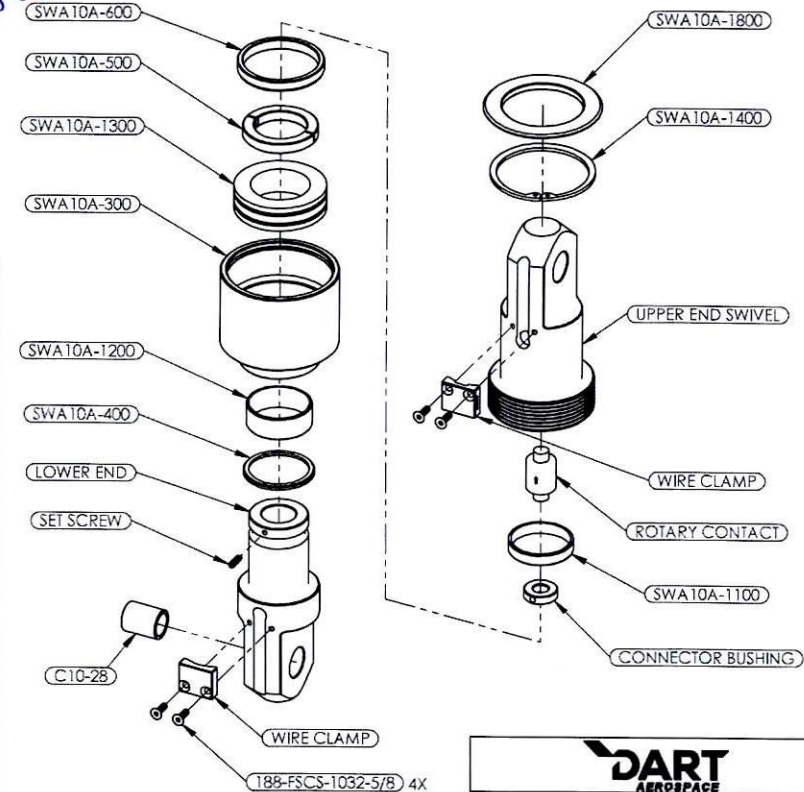
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WORK ORDER
NO. 172735 M.C.S
180221

REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		REPLACED ID DECAL 600.1318 WITH LASER ETCH	11/16/2012	JAG	
2	15-0146	UPDATED TO NEW DRAFTING STANDARDS. ADDED ENGRAVE NOTES AND DETAILS. SWA10A-1900 CHD QTY'S: ASSY-4 WAS 8 & 4. ASSY-8 WAS 16 & 12. SWA10A-2000 ADDED P/N: ASSY-4 QTY 4. ASSY-8 QTY 4. 188-FPSS-1032-5/8 CHD QTY'S: ASSY-8 WAS 16 & 12. 188-FPSS-1032-1/2 ADDED P/N: ASSY-4 QTY 1. 188-FPSS-1032-5/8 CHD QTY'S: ASSY-8 WAS 16 & 12. ADDED 871 TO B/O INFO. ADDED REBUILD ONLY NOTE	6/16/2015	D.P.D	JAG
3	17-0090	ADDED NOTE 3. SHEET 1. CHD P/N WAS EL616-ARTIC (TRUCK & AUTO SUPPLY) & #30806 (POLAR WIRE). ADDED P/N C10-28.	5/31/2017	R.J.C	JAG

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QTY	QTY	QTY	QTY	QTY	QTY	Part #	Description	Material	B/O INFORMATION OR SPECIFICATIONS
1	1	1	1	1	1	SWA10A-100	LOWER END	SS 17-4 H1150/H1075	
1	1	1	1	1	1	SWA10A-110	LOWER END	SS 17-4 H1150/H1075	
1	1	1	1	1	1	SWA10A-200	UPPER END SWIVEL	SS 17-4 H1150/H1075	
1	1	1	1	1	1	SWA10A-210	UPPER END SWIVEL	SS 17-4 H1150/H1075	
1	1	1	1	1	1	SWA10A-300	BEARING HOUSING	SS 17-4 H1150/H1075	
1	1	1	1	1	1	SWA10A-400	THRUST WASHER	AL-BRONZE #30	
1	1	1	1	1	1	SWA10A-500	SEMI-PIVOTS	SS 17-4 H1150/H1075	
1	1	1	1	1	1	SWA10A-600	COLLAR	SS 17-4 H1150/H1075	
2	2	2	2	2	2	SWA10A-700	WIRE CLAMP	6061-T6	
1	1	1	1	1	1	SWA10A-700A	WIRE CLAMP	6061-T6	
1	1	1	1	1	1	SWA10A-800A	CONNECTOR BUSHING		
1	1	1	1	1	1	SWA10A-800B	CONNECTOR BUSHING		
1	1	1	1	1	1	SWA10A-800C	CONNECTOR BUSHING		
1	1	1	1	1	1	SWA10A-900A	ROTARY CONTACT	MERCOTAC #230	
1	1	1	1	1	1	SWA10A-900B	ROTARY CONTACT	MERCOTAC #230	
1	1	1	1	1	1	SWA10A-900C	ROTARY CONTACT	MERCOTAC #430	
1	1	1	1	1	1	SWA10A-900D	ROTARY CONTACT	MERCOTAC #630	
1	1	1	1	1	1	SWA10A-900E	ROTARY CONTACT	MERCOTAC #830	
1	1	1	1	1	1	SWA10A-1100	UPPER DU BEARING	BRONZE/OLITE TUBING	
1	1	1	1	1	1	SWA10A-1200	LOWER DU BEARING	(KAMAN M85020DU)	
1	1	1	1	1	1	SWA10A-1300	ROLLER THRUST BEARING	(KAMAN 8121DN)	
1	1	1	1	1	1	SWA10A-1400	CHIRLIP	(KAMAN NS000 350 SFP)	
1	1	1	1	1	1	SWA10A-1800	COVER	SS 17-4 H1150/H1075	
4	4	4	4	4	4	SWA10A-1900	1/4 FEMALE SPADE CONNECTOR	(MCMMASTER-CARR #69525K16)	
1	1	1	1	1	1	SWA10A-2000	1/8 FEMALE SPADE CONNECTOR	(MCMMASTER-CARR #69525K14)	
4	4	4	4	4	4	188-FPSS-1032-5/8	FLAT SOCKET CAP SCREW	SS, 10-32 x 5/8 (MCMMASTER-CARR #92210A303)	
1	1	1	1	1	1	188-FPSS-1032-3/8	SET SCREW	SS, 10-32 x 3/8 (MCMMASTER-CARR #94355A335)	
1	1	1	1	1	1	188-FPSS-1032-1/2	SET SCREW	SS, 10-32 x 1/2 (MCMMASTER-CARR #94355A337)	
1	1	1	1	1	1	188-FPSS-1032-5/8	SET SCREW	SS, 10-32 x 5/8 (MCMMASTER-CARR #92311A430)	
1	1	1	1	1	1	EL-PLUG-F	FEMALE PLUG	PE High Density (MCMMASTER-CARR #7216K6)	
1	1	1	1	1	1	EL-PLUG-M	MALE PLUG	PE High Density (MCMMASTER-CARR #7216K5)	
1	1	1	1	1	1	EL314S-TOW	3 WIRE	6 FT. (TEKCAN #EL 314S-TOW 3/14)	
1	1	1	1	1	1	EL416-ARTIC	4 WIRE	6 FT. (TRUCK & AUTO SUPPLY #EL 416-ARTIC 4/14)	
1	1	1	1	1	1	EL616-ARTIC	6 WIRE	6 FT. (TRUCK & AUTO SUPPLY #EL 616-ARTIC)	
1	1	1	1	1	1	30806	8 WIRE	6 FT. (POLAR WIRE #30806)	
1	1	1	1	1	1	600.1319	UP DECAL		
1	1	1	1	1	1	C10-28	BUSHING	SAE 600 BRONZE 3/4 SHFT X 1 O.D. X 1-1/4 (MCMMASTER-CARR #6381K193)	



- NOTES:
- FOR REBUILD ONLY.
 - ALL ASSEMBLY TO BE DONE IN ACCORDANCE WITH SWA SWIVEL MANUAL.
 - 8 WIRE STRIP OUTER JACKET & DOUBLE LAYER HEAT SHRINK.

DART AEROSPACE		TITLE SWA 10A SWIVEL	
DWG NO. SWA 10A		REV 3	
MATERIAL SS 17-4 H1150/H1075		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES XXX ± .005 FRACTIONS ± 1/16 XX ± .01 ANGLES ± 5° X ± .1 SURFACES ± 125	
SPEC 1. BREAK ALL SHARP EDGES TO .015 ± .005 OR .0156		2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
DRAWN BY: GILBERT		3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009	
CHECKED: DD 04/18/2017		USED ON MODEL	
OPPS APPR: AA 05/05/2017			
QA APPR: JL 05/10/2017			
APPROVED: JAG 06/02/2017			
SCALE 1:4	DATE 11/14/2012	SHEET 1 OF 2	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

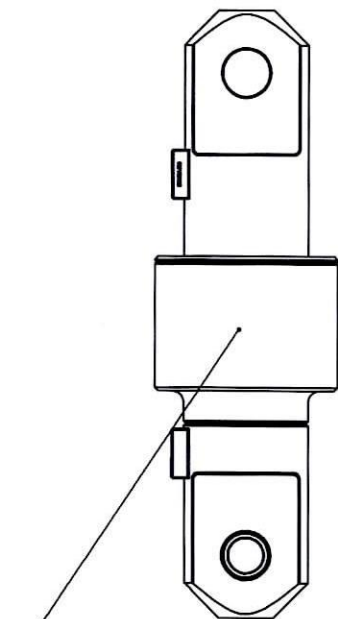
Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐ Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐			FAULT CATEGORY Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		
OTHER : _____					

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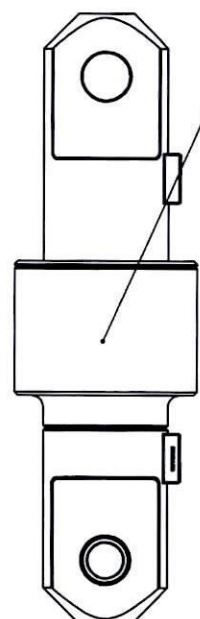
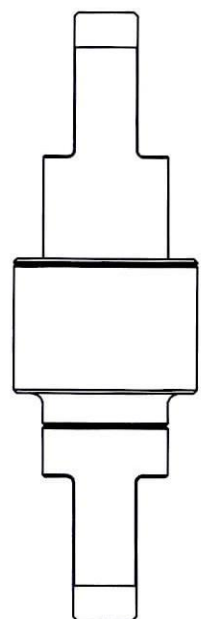
REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED



ENGRAVE P/N, S/N, SWL



LASER ENGRAVE DART LOGO



	
TITLE SWA10A SWIVEL	
DWG NO. SWA10A	REV 3
MAT'L HEAT TREAT FINISH SPEC	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ± 5° .X ± .1 SURFACES = 125/✓
DRAWN BY: GILBERT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DD 04/18/2017	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: AA 05/05/2017	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: JL 05/10/2017	USED ON MODEL
APPROVED: JAG 06/02/2017	
SCALE 1:4	DATE 11/14/2012
SHEET 2 OF 2	

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Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DE Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐	Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐	Rec/s _____
Date : _____		Step #: _____		QTY Effective : _____
Description Work Order Deviation			Disposition	
			Completed By _____	
			Lead hand / Supervisor Approval Verification _____	
			QC / QA Coordinator Approval _____	

Root Cause				FAULT CATEGORY			
Environment ☐		No Re-verification ☐		Pressure/Forced ☐		Temperature/Cure ☐	
Design ☐		Operator ☐		Bending ☐		Set-up ☐	
Doc/Data ☐		Offset/Setup ☐		Centre Not Concentric ☐		BOM/Route ☐	
Equip/Tooling ☐		Supplier ☐		Cracks ☐		Broken/Damage/Defect ☐	
Handling/Pre ☐		Training ☐		Crimp/Kink/Ripple/Wave ☐		Inspection Incomplete/Unqualified ☐	
Material ☐		Use for Testing ☐		Cuffs ☐		Contamination ☐	
Internal Transport ☐		Poor Information ☐		Crushing ☐		Countersink ☐	
Tribal Knowledge ☐		Rushing ☐		Heat Treat ☐		Cut Too Short ☐	
LOA ☐		Product Improvement ☐		Wave/Twist in Tube ☐		Instructions Incomplete/Unclear ☐	
Substation ☐		Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐	
Past Expiry Date ☐		Manufacturing Process ☐		OTHER : _____			
Misidentified ☐		Past Due ☐					